

## CLAIMS

What is claimed is:

1. A heat-developable image-recording material comprising on a support:
  - a silver-supplying layer containing an organic silver salt, a reducing agent, an organic binder and substantially no photosensitive silver halide; and
  - a separate photosensitive layer containing a photosensitive silver halide;
  - the heat-developable image-recording material further containing an electron-transfer agent.
2. The heat-developable image-recording material according to Claim 1 wherein the organic binder is formed from a polymer latex dispersed in an aqueous medium.
3. The heat-developable image-recording material according to Claim 2, wherein the reducing agent has been incorporated in the form of microparticles dispersed as a solid in an aqueous medium.
4. The heat-developable image-recording material according to Claim 2, wherein the silver-supplying layer contains a halogen precursor.
5. The heat-developable image-recording material according to Claim 3, wherein the silver-supplying layer contains a halogen precursor.

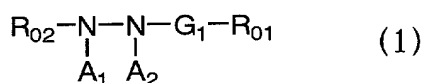
6. The heat-developable image-recording material according to Claim 4, wherein the halogen precursor has been incorporated in the form of microparticles dispersed as a solid in an aqueous medium.

7. The heat-developable image-recording material according to Claim 5, wherein the halogen precursor has been incorporated in the form of microparticles dispersed as a solid in an aqueous medium.

8. The heat-developable image-recording material according to Claim 1, wherein the electron-transfer agent is a compound selected from the group consisting of hydrazine derivatives, alkene derivatives, isooxazole derivatives and acetal compounds.

9. The heat-developable image-recording material according to Claim 2, wherein the electron-transfer agent is a compound selected from the group consisting of hydrazine derivatives, alkene derivatives, isooxazole derivatives and acetal compounds.

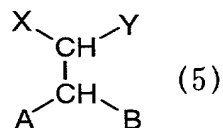
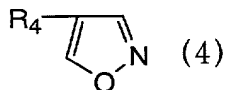
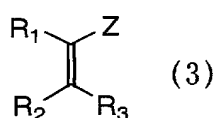
10. The heat-developable image-recording material according to Claim 1, wherein the electron-transfer agent is a hydrazine derivative represented by the general formula below:



wherein  $R_{02}$  denotes an aliphatic group or an aromatic group,  $R_{01}$  denotes hydrogen, alkyl, aryl, an unsaturated heterocyclic group, alkoxy,

aryoxy, amino or hydrazino,  $G_1$  denotes  $-\text{CO}-$ ,  $-\text{SO}_2-$ ,  $-\text{SO}-$ ,  $-\text{P}(\text{O})-$ ,  $-\text{R}_{03}\text{P}(\text{O})-$ ,  $-\text{COCO}-$ , thionylcarbonyl or iminomethylene, and  $A_1$  and  $A_2$  independently denote hydrogen, or substituted or unsubstituted alkylsulfonyl and  $\text{R}_{03}$  is chosen from the groups defined for  $\text{R}_{01}$  and may be the same as or different from  $\text{R}_{01}$ .

11. The heat-developable image-recording material according to Claim 2, wherein the electron-transfer agent is a compound selected from the group consisting of substituted alkene derivatives, substituted isoxazole derivatives and acetal compounds represented by the following general formulae (3) to (5)



wherein general formula (3)  $\text{R}_1$ ,  $\text{R}_2$  and  $\text{R}_3$  independently denote hydrogen or a substituent, and  $\text{Z}$  denotes an electron withdrawing group or a silyl group, in general formula (3),  $\text{R}_1$  and  $\text{Z}$ ,  $\text{R}_2$  and  $\text{R}_3$ ,  $\text{R}_1$  and  $\text{R}_2$ , or  $\text{R}_3$  and  $\text{Z}$  may be bonded together to form a cyclic structure, in general formula (4),  $\text{R}_4$  denotes a substituent, in general formula (5),  $\text{X}$  and  $\text{Y}$  independently represent hydrogen or a substituent;  $\text{A}$  and  $\text{B}$  independently denote alkoxy, alkylthio, alkylamino, aryloxy, arylthio, anilino, heterocyclic oxy, heterocyclic thio or heterocyclic amino, and in general formula (5),  $\text{X}$  and  $\text{Y}$ , and  $\text{A}$  and  $\text{B}$  may be bonded together to form a cyclic structure.

12. A method for forming an image by heat development comprising:

imagewise exposing a heat-developable image-recording material comprising, on a support,  
a silver-supplying layer containing an organic silver salt, a reducing agent, and an organic binder, and  
a separate photosensitive layer containing a photosensitive silver halide,  
the heat-developable image-recording material further containing an electron-transfer agent; and then

heat-developing the heat-developable image-recording material;

whereby development of the photosensitive layer forms a silver image in the silver-supplying layer.

13. The method for forming an image by heat development according to Claim 12, wherein the silver-supplying layer contains substantially no photosensitive silver halide.

14. The method for forming an image by heat development according to Claim 12, wherein the silver-supplying layer contains a halogen precursor.

15. The method for forming an image by heat development according to 12, wherein the photosensitive layer contains a reducing agent.